WHAT IS CLAIMED IS:

1. A method for computing filter coefficients of a beamformer based on a segment of input samples comprising the steps of:

dividing the segment of input samples into a plurality of blocks of input samples;

receiving the plurality of blocks of input samples in a shared memory at a first rate wherein a first block of the plurality of blocks is received in a shared memory at a first time;

reading the plurality of blocks of input samples from the shared memory at a second rate wherein the first block of the plurality of blocks is read from the shared memory at a second time,

computing a plurality of partial covariance matrices for the plurality of blocks read from the shared memory;

adding the plurality of partial covariance matrices.

2. The method of claim 1, wherein the segment of input samples corresponds to an N x S matrix of input samples and wherein the plurality of blocks of input samples correspond to L sub-matrices of the N x S matrix wherein the L sub-matrices are M x S matrices where M=N/L.

3. The method of claim 1, wherein the second time is delayed from the first time and the second rate is greater than or equal to the first rate.

4. The method of claim 1, wherein the second rate is less than the first rate.

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5. A method for computing filter coefficients of a beamformer based on a segment of input samples comprising the steps of:

dividing the segment of input samples into a plurality of blocks of input samples;

receiving the plurality of blocks of input samples in a shared memory;

reading the plurality of blocks of input samples by a plurality of partial covariance processors from the shared memory wherein each of the plurality of partial covariance processors compute a partial covariance matrix for each block of input samples read by the partial covariance processor;

adding the plurality of partial covariance matrices.

6. The method of claim 5, wherein the segment of input samples corresponds to an N x S matrix of input samples and wherein the plurality of blocks of input samples correspond to L sub-matrices of the N x S matrix wherein the L sub-matrices are M x S matrices where M=N/L.

7. An apparatus for computing filter coefficients of a beamformer based on a segment of input samples wherein the segment of input samples are divided into a plurality of blocks of input samples, the apparatus comprising:

a shared memory for receiving the plurality of blocks of input samples at a first rate wherein a first block of the plurality of blocks is received in a shared memory at a first time; and

a processor for reading the plurality of blocks of input samples from the shared memory at a second rate, computing a plurality of partial covariance matrices for the

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plurality of blocks read from the shared memory, adding the plurality of partial covariance matrices,

wherein the first block of the plurality of blocks is read from the shared memory at a second time, wherein the second time is delayed from the first time and the second rate is greater than the first rate.

8. An apparatus for computing filter coefficients of a beamformer based on a segment of input samples wherein the segment of input samples are divided into a plurality of blocks of input samples, the apparatus comprising:

a shared memory for receiving the plurality of blocks of input samples; and

a plurality of partial covariance processors for reading the plurality of blocks of input samples from the shared memory wherein each plurality of partial covariance processors compute a partial covariance matrix for each block of input samples read by the partial covariance processor;

a processor for adding the partial covariance matrices computed by the plurality of partial covariance processors.

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